



Technology Talent Fund

Alison Lubin, Director of Tech Talent Fund
Connecticut Department of Economic and Community Development

Connecticut

Agenda

Welcome and Introductions

Organizational Logistics

- Nomination of Chair
- Future meeting dates/times
- Ethics Review

Review of Statute and Tech Talent Advisory Committee's Charge

The Current Landscape

Initial Strategy Discussion



Senate Bill No. 502

The Technology Talent Advisory Committee is tasked with:

- Calculating the number of software developers and other persons:
 - Employed in tech-based fields where there is a shortage of qualified employees in this state for businesses to hire
 - Employed by businesses located in Connecticut as of December 31, 2016
- Developing pilot programs to recruit software developers to Connecticut and train residents of the state in software development and such other tech fields, with the goal of doubling employment by January 1, 2026
- Identifying other technology industries where there is a shortage of qualified employees in this state for growth stage businesses to hire



Alison says:

- CT has significant strengths, especially in education and workforce – we produce very smart and very productive workers
- Everyone in this room realizes that technology is no longer its own sector or industry – it has crossed the boundaries into every workplace, no matter if its healthcare, bioscience, finance, or manufacturing
- In order to maintain this competitive edge, Connecticut needs to make sure we are investing in programs to build and recruit tech talent

Meeting Notes:

- Catherine Smith: when legislation was being developed, it became clear that we don't have a uniform definition for "tech talent." **Perhaps that should be the first goal of the Adv Committee: defining what tech talent is**

Pilot Programs

Legislation suggests that the Advisory Committee may develop pilot programs for:

1. Marketing and publicity campaigns designed to recruit tech talent
2. Student loan deferral or forgiveness for students who start businesses in the state
3. Training, apprenticeship, and gap-year initiatives

Ultimately, the Advisory Committee will have the ability to determine its goals, objectives, and strategies



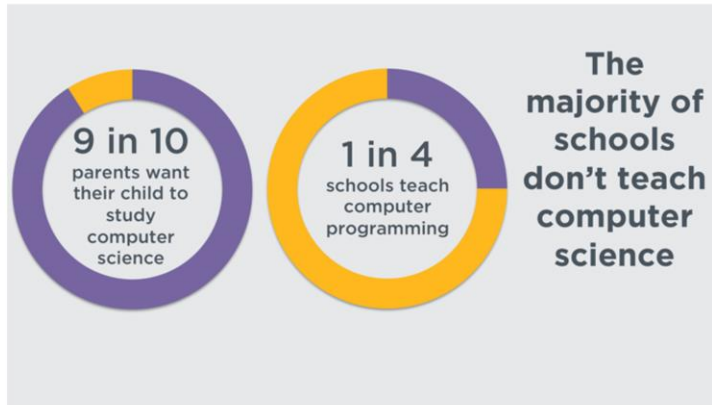
Alison says:

- And the TTAC has been given \$2M in bond dollars annually for the next 5 years to achieve the established goals

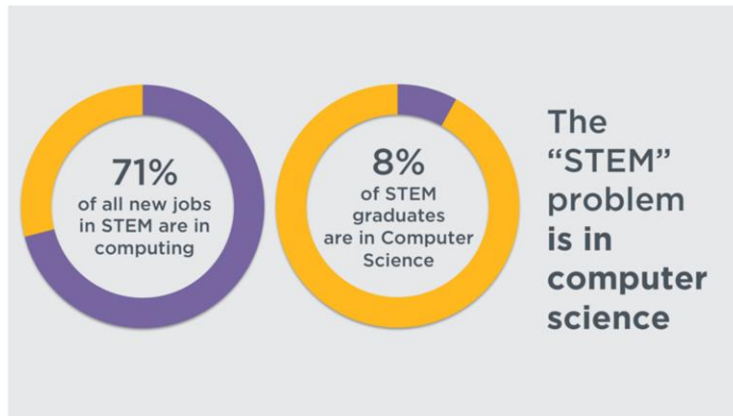
Big Picture

Determine the greatest gaps in tech talent and begin to identify areas where the Fund could make strategic investments to help fill those gaps

The National Landscape



The National Landscape



The National Landscape

- Only 32 states allow students to count computer science courses toward high school graduation
 - Connecticut only considers CS an elective
- 2014:
 - 523,222 open computing jobs nationwide...
 - But only 42,969 students graduated with Bachelor's degrees in Computer Science



Alison says:

- The data also shows us that the field is largely dominated by men, in particular white men. Many big companies are making a push to include more women and people of color in their hiring. There are also a number of organizations across the country committed to involving underrepresented populations in computer science programs (e.g., Code.org, Girls Who Code, etc)
- This is not just a Connecticut issue, but this is Connecticut's chance to gain some competitive ground

CT Computer Science Programs

K-12 Education:

- Only 55 schools in CT offered AP Computer Science in 2014-2015 (21% of schools with AP Programs)
 - 2015:
 - 26,789 students took 48,559 AP tests
 - 648 students took the AP Computer Science exam

Higher Education:

- 3 Associate Degree programs
- 15 Bachelor Degree programs
 - 5 public universities
 - 10 private universities



Alison says:

- The AP percentages:
 - 2.4% of students taking exams are taking AP CS
 - 1.3% of all exams taken were the AP CS

Meeting Notes:

- Mike Silvestrini: everything so far has been totally through the lens of academia and if we are exclusively using academic data, we may be missing something
 - Some of the best guys in the field were people who graduated high school, didn't go to college, and then went off to develop apps and companies
- Josh Geballe: While Mike's comments make sense, we will have to focus our efforts and pick fights, because \$2M isn't all that much money. We're going to want to get the most bang for our buck, so maybe we don't want to focus on the entrepreneurs going to start global companies, but on keeping the kids who graduate from the 15 CS programs in state after graduation or increasing the number of students in the programs
- Derek Koch, participant: sees all of this as a skills issue – what skills are needed at the end of the rainbow and how do we infuse that? There should be a focus on skills development
- Julio Mansilla: echoes the notion of vast underrepresentation of minorities and women in the AP CS exam – of the people of color who took the exam, they did not perform very well, either. This is an underrepresentation issue, but also people of color are lacking skills in the area
- Karen Hinds, participant: We also need to change the perception of what tech talent is and what tech talent looks like (i.e., it's not "nerdy")
- Alex Schwarzmenn: K-12 is probably a really important place to start, because there are very few teachers that can competently teach informatics and computer science

Once Connecticut Students Graduate...

UConn

- 2012-2013:
 - 17 Computer Information & Science majors, 10 (~59%) employed in Connecticut
- 2013-2014:
 - 27 Computer Information & Science majors, 18 (66.7%) employed in Connecticut

CSCU

- 2012-2013:
 - 120 Computer Information & Science majors, 93 (~78%) employed in Connecticut
- 2013-2014:
 - 134 Computer Information & Science majors, 94 (~70%) employed in Connecticut



Alison says:

- There are limitations to this data, however
 - Doesn't include federal employees or kids in graduate school
 - Just a snapshot in time

Once Connecticut Students Graduate...

- Roughly 60%-70% of Computer Science graduates at public Connecticut universities are employed in Connecticut within a year of graduation
- Preliminary data suggests a different story for private schools:
 - School-wide post-grad retention rates for Yale and Trinity are below 10%
 - University of Hartford averages around 40%

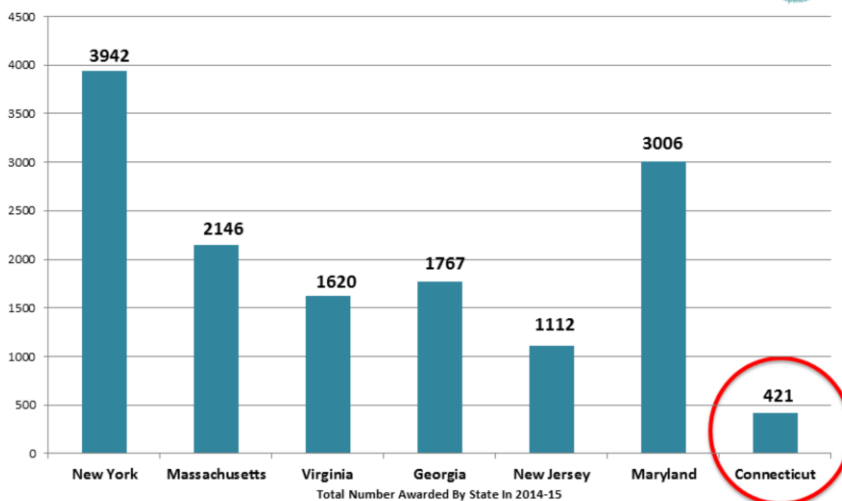


Meeting Notes:

- Jen Widness, participant: the percentage of students at a school from CT is very likely linked to the percentage of students that stay in the state following graduation, CCIC is also still working on the data
- How many of these students are international? And are leaving to go back to their home country because their visa is up and cannot get a new one to stay and work in the country

Total Bachelor's Degrees Awarded in 2014-15 in Engineering & Computer Science

Source: IPEDS



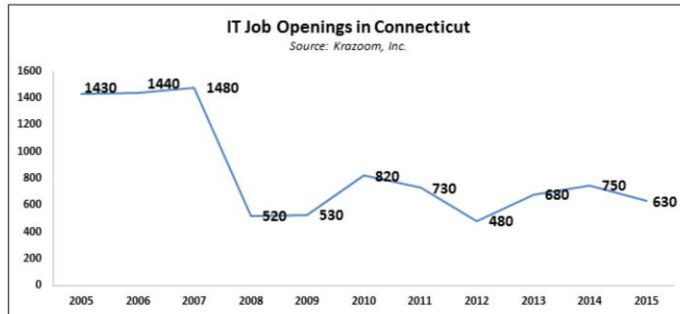
Connecticut
still revolutionary

IT Jobs in Connecticut

Information Technology cluster:

Careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services¹

- 54,220 professionals in Connecticut's IT cluster



Sources: 1. O*Net OnLine (U.S. DOL)



Alison says:

- Difficult to research, because IT isn't always readily defined
- Data comes from DOL and survey data using job postings

Meeting notes:

- Catherine Smith: is this the right definition for IT professionals?
- Pedro Bermudez: we might want to find out the number of companies that are outsourcing their work internationally and work to get those companies to bring their jobs back here
- Mark Stankewicz, participant: offering DOL assistance in slicing and dicing the data to help IT jobs make sense

What we are hearing so far

Job Cycle Gap

- Not enough graduates
- Not enough jobs/companies

Communication Gap

- Breakdown in communications between universities, employers, and students
 - Lack of adequate advertising at CT colleges and universities for job fairs and postings

Skills Gap

- Practical skills are not being taught in most Computer Science programs at Connecticut colleges and universities
- Graduates are missing the required experience for “entry level jobs”



Meeting Notes:

- The skills area is really important
- Jen Widness, participant: P20Win can be a great resources
- Catherine Smith: does anyone have a researcher that can help Alison with getting numbers/data?
 - Jen: offers Wesleyan's assistance
 - Alex: if Alison sends a job description, he'd be happy to post
 - Ken: might be a good project for a MBA class
- Derek: also suggested someone from IBM to serve on the Committee as they are already involved in K-12 tech skills education
- **YOUR HOMEWORK: what data do we need? Feel free to email Alison with thoughts. Next meeting will be a brainstorm session of where should we go from our current position, as well as discussing our data needs**

Where do we go from here?





Technology Talent Fund

Alison Lubin, Director of Tech Talent Fund

Connecticut Department of Economic and Community Development

